

B AUTO, 2

22feb06 12:45:44 User264717 Session D418.1  
\$0.00 . 0.323 DialUnits FileHomeBase  
\$0.00 Estimated cost FileHomeBase  
\$0.06 INTERNET  
\$0.06 Estimated cost this search  
\$0.06 Estimated total session cost 0.323 DialUnits

SYSTEM:OS - DIALOG OneSearch

File 6:NTIS 1964-2006/Feb W1  
(c) 2006 NTIS, Intl Cpyrght All Rights Res  
File 8:EI Compendex(R) 1970-2006/Feb W2  
(c) 2006 Elsevier Eng. Info. Inc.  
File 25:Weldasearch-19662006/Jan (c) 2006 TWI Ltd  
File 36:MetalBase 1965-20060220  
(c) 2006 The Dialog Corporation  
File 63:Transport Res(TRIS) 1970-2006/Jan  
(c) fmt only 2006 Dialog  
File 65:Inside Conferences 1993-2006/Feb W3  
(c) 2006 BLDSC all rts. reserv.  
File 81:MIRA - Motor Industry Research 2001-2006/Dec  
(c) 2006 MIRA Ltd.  
File 94:JICST-EPlus 1985-2006/Nov W4  
(c)2006 Japan Science and Tech Corp(JST)  
File 95:TEME-Technology & Management 1989-2006/Feb W3  
(c) 2006 FIZ TECHNIK  
File 266:FEDRIP 2005/Dec  
Comp & dist by NTIS, Intl Copyright All Rights Res  
File 2:INSPEC 1898-2006/Feb W2  
(c) 2006 Institution of Electrical Engineers  
**\*File 2: Archive data back to 1898 has been added to File 2.**

Set	Items	Description
---	-----	-----

?

Set	Items	Description
S1	0	((CURVE? (S) ROAD? (S) VEHICLE?) (S) (DETERMIN? OR ESTIMAT- ?)) AND (GRADIENT? (7W) PIXEL?) AND PD<=000414
S2	0	((CURVE? (S) ROAD? (S) VEHICLE?) (S) (DETERMIN? OR ESTIMAT- ?)) AND (GRADIENT? (9N) PIXEL?) AND PD<=000414
S3	0	(MONITOR? (3W) MOTION? (3W) VEHICLE?) AND CAMERA AND ((ES- TIMAT? OR DETERMIN?)(3W) CURVE?) AND PD<=000414
S4	0	(MONITOR? (3W) (MOTION? OR MOV?)) AND CAMERA AND ((ESTIMA- T? OR DETERMIN?)(3W) CURVE?) AND PD<=000414
S5	0	(MONITOR? (3W) (MOTION? OR MOV???) AND CAMERA AND (CURV- E? (5N)(ESTIMAT? OR DETERMIN?)) AND PD<=000414
S6	0	(MONITOR? (3N) (MOTION? OR MOV???) AND CAMERA AND (CURV- E? (5N)(ESTIMAT? OR DETERMIN?))
?		

```
S ((CURVE? (S) ROAD? (S) VEHICLE?) (S) (DETERMIN? OR ESTIMAT?)) AND (GRADIENT? (7W)
>>>One or more prefixes are unsupported
>>> or undefined in one or more files.
>>>File 25 processing for PD= : PD=000414
>>> started at PD=19080000 stopped at PD=19920106
>>>File 63 processing for PD= : PD=000414
>>> started at PD=DATED stopped at PD=19680517
>>>File 81 processing for PD= : PD=000414
>>> started at PD=19390728 stopped at PD=19920325
Processing
Processed 10 of 11 files ...
Completed processing all files
    704180 CURVE?
    352758 ROAD?
    595861 VEHICLE?
    3049343 DETERMIN?
    1547940 ESTIMAT?
    566 CURVE?(S)ROAD?(S)VEHICLE?(S)(DETERMIN? OR ESTIMAT?)
    324977 GRADIENT?
    103647 PIXEL?
    378 GRADIENT?(7W)PIXEL?
    1271855 PD<=000414
S1      0 ((CURVE? (S) ROAD? (S) VEHICLE?) (S) (DETERMIN? OR
          ESTIMAT?)) AND (GRADIENT? (7W) PIXEL?) AND PD<=000414
?
```

```
S ((CURVE? (S) ROAD? (S) VEHICLE?) (S) (DETERMIN? OR ESTIMAT?)) AND (GRADIENT? (9N)
>>>One or more prefixes are unsupported
>>> or undefined in one or more files.
>>>File 25 processing for PD= : PD=000414
>>> started at PD=19080000 stopped at PD=19920106
>>>File 63 processing for PD= : PD=000414
>>> started at PD=DATED stopped at PD=19680517
>>>File 81 processing for PD= : PD=000414
>>> started at PD=19390728 stopped at PD=19920325
    704180 CURVE?
    352758 ROAD?
    595861 VEHICLE?
    3049343 DETERMIN?
    1547940 ESTIMAT?
    566 CURVE?(S)ROAD?(S)VEHICLE?(S) (DETERMIN? OR ESTIMAT?)
    324977 GRADIENT?
    103647 PIXEL?
    751 GRADIENT?(9N)PIXEL?
    1271855 PD<=000414
S2      0 ((CURVE? (S) ROAD? (S) VEHICLE?) (S) (DETERMIN? OR
          ESTIMAT?)) AND (GRADIENT? (9N) PIXEL?) AND PD<=000414
?
```

```
S (MONITOR? (3W) MOTION? (3W) VEHICLE?) AND CAMERA AND ((ESTIMAT? OR DETERMIN?)(3W)
>>>One or more prefixes are unsupported
>>> or undefined in one or more files.
>>>File 25 processing for PD= : PD=000414
>>> started at PD=19080000 stopped at PD=19920106
>>>File 63 processing for PD= : PD=000414
>>> started at PD=DATED stopped at PD=19680517
>>>File 81 processing for PD= : PD=000414
>>> started at PD=19390728 stopped at PD=19920325
    772921 MONITOR?
    885436 MOTION?
    595861 VEHICLE?
        21 MONITOR?(3W)MOTION?(3W)VEHICLE?
    163632 CAMERA
    1547940 ESTIMAT?
    3049343 DETERMIN?
    704180 CURVE?
    11451 (ESTIMAT? OR DETERMIN?)(3W)CURVE?
    1271855 PD<=000414
S3      0 (MONITOR? (3W) MOTION? (3W) VEHICLE?) AND CAMERA AND
        ((ESTIMAT? OR DETERMIN?)(3W) CURVE?) AND PD<=000414
?
```

```
S (MONITOR? (3W) (MOTION? OR MOV?)) AND CAMERA AND ((ESTIMAT? OR DETERMIN?)(3W) CUR
>>>One or more prefixes are unsupported
>>> or undefined in one or more files.
>>>File 25 processing for PD= : PD=000414
>>> started at PD=19080000 stopped at PD=19920106
>>>File 63 processing for PD= : PD=000414
>>> started at PD=DATED stopped at PD=19680517
>>>File 81 processing for PD= : PD=000414
>>> started at PD=19390728 stopped at PD=19920325
    772921 MONITOR?
    885436 MOTION?
    788160 MOV?
    4252 MONITOR?(3W) (MOTION? OR MOV?)
    163632 CAMERA
    1547940 ESTIMAT?
    3049343 DETERMIN?
    704180 CURVE?
    11451 (ESTIMAT? OR DETERMIN?)(3W)CURVE?
    1271855 PD<=000414
S4      0 (MONITOR? (3W) (MOTION? OR MOV?)) AND CAMERA AND
        ((ESTIMAT? OR DETERMIN?)(3W) CURVE?) AND PD<=000414
?
```

```
S (MONITOR? (3W) (MOTION? OR MOV???) AND CAMERA AND (CURVE? (5N) (ESTIMAT? OR DETE
>>>One or more prefixes are unsupported
>>> or undefined in one or more files.
>>>File 25 processing for PD= : PD=000414
>>> started at PD=19080000 stopped at PD=19920106
>>>File 63 processing for PD= : PD=000414
>>> started at PD=DATED stopped at PD=19680517
>>>File 81 processing for PD= : PD=000414
>>> started at PD=19390728 stopped at PD=19920325
    772921 MONITOR?
    885436 MOTION?
    465089 MOV???
    1960 MONITOR?(3W) (MOTION? OR MOV???)
    163632 CAMERA
    704180 CURVE?
    1547940 ESTIMAT?
    3049343 DETERMIN?
    34849 CURVE?(5N) (ESTIMAT? OR DETERMIN?)
    1271855 PD<=000414
S5      0 (MONITOR? (3W) (MOTION? OR MOV???) AND CAMERA AND
        (CURVE? (5N) (ESTIMAT? OR DETERMIN?)) AND PD<=000414
?
```

S (MONITOR? (3N) (MOTION? OR MOV???) AND CAMERA AND (CURVE? (5N) (ESTIMAT? OR DETERMIN?))  
772921 MONITOR?  
885436 MOTION?  
465089 MOV???  
3193 MONITOR? (3N) (MOTION? OR MOV???)  
163632 CAMERA  
704180 CURVE?  
1547940 ESTIMAT?  
3049343 DETERMIN?  
34849 CURVE? (5N) (ESTIMAT? OR DETERMIN?)  
S6 0 (MONITOR? (3N) (MOTION? OR MOV???) AND CAMERA AND  
(CURVE? (5N) (ESTIMAT? OR DETERMIN?))  
?



# 09/834,736 – Dialog Classic Web searches on automobile, and INSPEC (IEEE journals)

S (CURVE (S) ROAD (S) VEHICLE (S) ESTIMAT???) AND (GRADIENT (7W) PIXEL) AND PD<=000414

```
>>>One or more prefixes are unsupported
>>> or undefined in one or more files.
>>>File 14 processing for PD= : PD=000414
>>> started at PD=APR.0000 stopped at PD=19830314
>>>File 25 processing for PD= : PD=000414
>>> started at PD=19080000 stopped at PD=19920106
>>>File 33 processing for PD= : PD=000414
>>> started at PD=JUNE0000 stopped at PD=19820607
>>>File 60 processing for PD= : PD=000414
>>> started at PD=NOV.0000 stopped at PD=19871222
>>>File 61 processing for PD= : PD=000414
>>> started at PD=APR.0000 stopped at PD=19890308
>>>File 63 processing for PD= : PD=000414
>>> started at PD=DATED stopped at PD=19680517
>>>File 81 processing for PD= : PD=000414
>>> started at PD=19390728 stopped at PD=19920325
>>>File 87 processing for PD= : PD=000414
>>> started at PD=040129 stopped at PD=19730205
Processing
>>>File 99 processing for PD= : PD=000414
>>> started at PD=DEC.1200 stopped at PD=19910204
Processed 20 of 38 files ...
>>>File 103 processing for PD= : PD=000414
>>> started at PD=0210 stopped at PD=19740401
>>>File 104 processing for PD= : PD=000414
>>> started at PD=AGAJANIAN091998 stopped at PD=19651008
>>>File 118 processing for PD= : PD=000414
>>> started at XP=0 stopped at XP=19830519
>>>File 134 processing for PD= : PD=000414
>>> started at PD=N.D.0000 stopped at PD=19980300
>>>File 144 processing for PD= : PD=000414
>>> started at PD=18019 stopped at PD=198311
>>>File 240 processing for PD= : PD=000414
>>> started at PD=280229 stopped at PD=740412
>>>File 293 processing for PD= : PD=000414
>>> started at PD=APR.0000 stopped at PD=19961230
>>>File 315 processing for PD= : PD=000414
>>> started at PD=19370000 stopped at PD=19800707
Completed processing all files
```

```
769200 CURVE
452465 ROAD
721083 VEHICLE
3648146 ESTIMAT???
119 CURVE (S) ROAD (S) VEHICLE (S) ESTIMAT???
688004 GRADIENT
121545 PIXEL
347 GRADIENT (7W) PIXEL
12498837 PD<=000414
S2 0 (CURVE (S) ROAD (S) VEHICLE (S) (determmmin? Or ESTIMAT???)
)AND
```

(GRADIENT (7W) PIXEL) AND PD<=000414

S (CURVE (S) ROAD (S) VEHICLE (S) ESTIMAT???) AND (GRADIENT (9W) PIXEL) AND  
PD<=000414

>>>One or more prefixes are unsupported  
>>> or undefined in one or more files.  
>>>File 14 processing for PD= : PD=000414  
>>> started at PD=APR.0000 stopped at PD=19830314  
>>>File 25 processing for PD= : PD=000414  
>>> started at PD=19080000 stopped at PD=19920106  
>>>File 33 processing for PD= : PD=000414  
>>> started at PD=JUNE0000 stopped at PD=19820607  
>>>File 60 processing for PD= : PD=000414  
>>> started at PD=NOV.0000 stopped at PD=19871222  
>>>File 61 processing for PD= : PD=000414  
>>> started at PD=APR.0000 stopped at PD=19890308  
>>>File 63 processing for PD= : PD=000414  
>>> started at PD=DATED stopped at PD=19680517  
>>>File 81 processing for PD= : PD=000414  
>>> started at PD=19390728 stopped at PD=19920325  
>>>File 87 processing for PD= : PD=000414  
>>> started at PD=040129 stopped at PD=19730205  
>>>File 99 processing for PD= : PD=000414  
>>> started at PD=DEC.1200 stopped at PD=19910204  
>>>File 103 processing for PD= : PD=000414  
>>> started at PD=0210 stopped at PD=19740401  
Processing  
>>>File 104 processing for PD= : PD=000414  
>>> started at PD=AGAJANIAN091998 stopped at PD=19651008  
Processed 20 of 38 files ...  
>>>File 118 processing for PD= : PD=000414  
>>> started at XP=0 stopped at XP=19830519  
>>>File 134 processing for PD= : PD=000414  
>>> started at PD=N.D.0000 stopped at PD=19980300  
>>>File 144 processing for PD= : PD=000414  
>>> started at PD=18019 stopped at PD=198311  
>>>File 240 processing for PD= : PD=000414  
>>> started at PD=280229 stopped at PD=740412  
>>>File 293 processing for PD= : PD=000414  
>>> started at PD=APR.0000 stopped at PD=19961230  
>>>File 315 processing for PD= : PD=000414  
>>> started at PD=19370000 stopped at PD=19800707  
Completed processing all files

769200 CURVE  
452465 ROAD  
721083 VEHICLE  
3648146 ESTIMAT???  
119 CURVE(S) ROAD(S) VEHICLE(S) ESTIMAT???  
688004 GRADIENT  
121545 PIXEL  
399 GRADIENT(9W) PIXEL  
12498837 PD<=000414  
S3 0 (CURVE (S) ROAD (S) VEHICLE (S) ESTIMAT???) AND  
(GRADIENT (9W) PIXEL) AND PD<=000414

S (MONITOR? (3W) MOTION (3W) VEHICLE) AND CAMERA AND ((ESTIMAT? OR DETERMIN?)  
(3W) CURVE) AND PD<=000414

>>>One or more prefixes are unsupported

```

>>> or undefined in one or more files.
>>>File 14 processing for PD= : PD=000414
>>> started at PD=APR.0000 stopped at PD=19830314
>>>File 25 processing for PD= : PD=000414
>>> started at PD=19080000 stopped at PD=19920106
>>>File 33 processing for PD= : PD=000414
>>> started at PD=JUNE0000 stopped at PD=19820607
Processing
Processed 10 of 38 files ...
>>>File 60 processing for PD= : PD=000414
>>> started at PD=NOV.0000 stopped at PD=19871222
>>>File 61 processing for PD= : PD=000414
>>> started at PD=APR.0000 stopped at PD=19890308
>>>File 63 processing for PD= : PD=000414
>>> started at PD=DATED stopped at PD=19680517
>>>File 81 processing for PD= : PD=000414
>>> started at PD=19390728 stopped at PD=19920325
>>>File 87 processing for PD= : PD=000414
>>> started at PD=040129 stopped at PD=19730205
>>>File 99 processing for PD= : PD=000414
>>> started at PD=DEC.1200 stopped at PD=19910204
>>>File 103 processing for PD= : PD=000414
>>> started at PD=0210 stopped at PD=19740401
Processing
>>>File 104 processing for PD= : PD=000414
>>> started at PD=AGAJANIAN091998 stopped at PD=19651008
Processed 20 of 38 files ...
>>>File 118 processing for PD= : PD=000414
>>> started at XP=0 stopped at XP=19830519
>>>File 134 processing for PD= : PD=000414
>>> started at PD=N.D.0000 stopped at PD=19980300
>>>File 144 processing for PD= : PD=000414
>>> started at PD=18019 stopped at PD=198311
>>>File 240 processing for PD= : PD=000414
>>> started at PD=280229 stopped at PD=740412
>>>File 293 processing for PD= : PD=000414
>>> started at PD=APR.0000 stopped at PD=19961230
>>>File 315 processing for PD= : PD=000414
>>> started at PD=19370000 stopped at PD=19800707
Processing
Processed 30 of 38 files ...
Completed processing all files
    1897887 MONITOR?
    1546352 MOTION
    721083 VEHICLE
    14 MONITOR? (3W) MOTION (3W) VEHICLE
    292009 CAMERA
    3685127 ESTIMAT?
    8603352 DETERMIN?
    769200 CURVE
    11455 (ESTIMAT? OR DETERMIN?) (3W) CURVE
    12498837 PD<=000414
S1 0 (MONITOR? (3W) MOTION (3W) VEHICLE) AND CAMERA AND
    ((ESTIMAT? OR DETERMIN?) (3W) CURVE) AND PD<=000414

```

S (MONITOR? (3W) (MOTION OR MOV???) AND CAMERA AND ((ESTIMAT? OR DETERMIN?) (3W) CURVE) AND PD<=000414

>>>One or more prefixes are unsupported

>>> or undefined in one or more files.

>>>File 14 processing for PD= : PD=000414

>>> started at PD=APR.0000 stopped at PD=19830314

>>>File 25 processing for PD= : PD=000414

>>> started at PD=19080000 stopped at PD=19920106

>>>File 33 processing for PD= : PD=000414

>>> started at PD=JUNE0000 stopped at PD=19820607

Processing

>>>File 60 processing for PD= : PD=000414

>>> started at PD=NOV.0000 stopped at PD=19871222

>>>File 61 processing for PD= : PD=000414

>>> started at PD=APR.0000 stopped at PD=19890308

>>>File 63 processing for PD= : PD=000414

>>> started at PD=DATED stopped at PD=19680517

Processed 10 of 38 files ...

>>>File 81 processing for PD= : PD=000414

>>> started at PD=19390728 stopped at PD=19920325

>>>File 87 processing for PD= : PD=000414

>>> started at PD=040129 stopped at PD=19730205

>>>File 99 processing for PD= : PD=000414

>>> started at PD=DEC.1200 stopped at PD=19910204

>>>File 103 processing for PD= : PD=000414

>>> started at PD=0210 stopped at PD=19740401

>>>File 104 processing for PD= : PD=000414

>>> started at PD=AGAJANIAN091998 stopped at PD=19651008

>>>File 118 processing for PD= : PD=000414

>>> started at XP=0 stopped at XP=19830519

>>>File 134 processing for PD= : PD=000414

>>> started at PD=N.D.0000 stopped at PD=19980300

>>>File 144 processing for PD= : PD=000414

>>> started at PD=18019 stopped at PD=198311

Processing

Processed 30 of 38 files ...

>>>File 240 processing for PD= : PD=000414

>>> started at PD=280229 stopped at PD=740412

>>>File 293 processing for PD= : PD=000414

>>> started at PD=APR.0000 stopped at PD=19961230

>>>File 315 processing for PD= : PD=000414

>>> started at PD=19370000 stopped at PD=19800707

Completed processing all files

1897887 MONITOR?

1546352 MOTION

1024132 MOV???

3329 MONITOR? (3W) (MOTION OR MOV???)

292009 CAMERA

3685127 ESTIMAT?

8603352 DETERMIN?

769200 CURVE

11455 (ESTIMAT? OR DETERMIN?) (3W) CURVE

12498837 PD<=000414

S2 0 (MONITOR? (3W) (MOTION OR MOV???) AND CAMERA AND  
((ESTIMAT? OR DETERMIN?) (3W) CURVE) AND PD<=000414

?

S (MONITOR? (3W) (MOTION OR MOV???) AND CAMERA AND (CURV? (3W) (ESTIMAT? OR DETERMIN?)) AND PD<=000414

>>>One or more prefixes are unsupported

>>> or undefined in one or more files.

>>>File 14 processing for PD= : PD=000414

>>> started at PD=APR.0000 stopped at PD=19830314

>>>File 25 processing for PD= : PD=000414

>>> started at PD=19080000 stopped at PD=19920106

>>>File 33 processing for PD= : PD=000414

>>> started at PD=JUNE0000 stopped at PD=19820607

Processing

>>>File 60 processing for PD= : PD=000414

>>> started at PD=NOV.0000 stopped at PD=19871222

>>>File 61 processing for PD= : PD=000414

>>> started at PD=APR.0000 stopped at PD=19890308

>>>File 63 processing for PD= : PD=000414

>>> started at PD=DATED stopped at PD=19680517

Processed 10 of 38 files ...

>>>File 81 processing for PD= : PD=000414

>>> started at PD=19390728 stopped at PD=19920325

>>>File 87 processing for PD= : PD=000414

>>> started at PD=040129 stopped at PD=19730205

>>>File 99 processing for PD= : PD=000414

>>> started at PD=DEC.1200 stopped at PD=19910204

>>>File 103 processing for PD= : PD=000414

>>> started at PD=0210 stopped at PD=19740401

>>>File 104 processing for PD= : PD=000414

>>> started at PD=AGAJANIAN091998 stopped at PD=19651008

>>>File 118 processing for PD= : PD=000414

>>> started at XP=0 stopped at XP=19830519

>>>File 134 processing for PD= : PD=000414

>>> started at PD=N.D.0000 stopped at PD=19980300

>>>File 144 processing for PD= : PD=000414

>>> started at PD=18019 stopped at PD=198311

Processing

Processed 30 of 38 files ...

>>>File 240 processing for PD= : PD=000414

>>> started at PD=280229 stopped at PD=740412

>>>File 293 processing for PD= : PD=000414

>>> started at PD=APR.0000 stopped at PD=19961230

>>>File 315 processing for PD= : PD=000414

>>> started at PD=19370000 stopped at PD=19800707

Completed processing all files

1897887 MONITOR?

1546352 MOTION

1024132 MOV???

3329 MONITOR? (3W) (MOTION OR MOV???)

292009 CAMERA

1866371 CURV?

3685127 ESTIMAT?

8603352 DETERMIN?

31276 CURV? (3W) (ESTIMAT? OR DETERMIN?)

12498837 PD<=000414

S3 0 (MONITOR? (3W) (MOTION OR MOV???) AND CAMERA AND (CURV?  
(3W) (ESTIMAT? OR DETERMIN?)) AND PD<=000414

S (MONITOR? (3W) (MOTION OR MOV???) AND CAMERA AND (CURV? (3N) (ESTIMAT? OR DETERMIN?))

Processing

Processed 30 of 38 files ...

Completed processing all files

1897887 MONITOR?

1546352 MOTION

1024132 MOV???

3329 MONITOR? (3W) (MOTION OR MOV???)

292009 CAMERA

1866371 CURV?

3685127 ESTIMAT?

8603352 DETERMIN?

58719 CURV? (3N) (ESTIMAT? OR DETERMIN?)

S4 0 (MONITOR? (3W) (MOTION OR MOV???) AND CAMERA AND (CURV?  
(3N) (ESTIMAT? OR DETERMIN?))

## Hit List

[First Hit](#)[Clear](#)[Generate Collection](#)[Print](#)[Fwd Refs](#)[Bkwd Refs](#)[Generate OACS](#)

Search Results - Record(s) 1 through 8 of 8 returned.

☐ 1. Document ID: US 6501848 B1

Using default format because multiple data bases are involved.

L5: Entry 1 of 8

File: USPT

Dec 31, 2002

US-PAT-NO: 6501848

DOCUMENT-IDENTIFIER: US 6501848 B1

TITLE: Method and apparatus for three-dimensional reconstruction of coronary vessels from angiographic images and analytical techniques applied thereto

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Carroll; John	Littleton	CO		
Chen; Shiuh-Yung James	Denver	CO		

US-CL-CURRENT: [382/128](#); [382/285](#), [434/272](#)

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Abstract</a>	<a href="#">Claims</a>	<a href="#">KIMC</a>	<a href="#">Draw De</a>
----------------------	-----------------------	--------------------------	-----------------------	------------------------	--------------------------------	----------------------	---------------------------	--------------------------	------------------------	----------------------	-------------------------

☐ 2. Document ID: US 6460127 B1

L5: Entry 2 of 8

File: USPT

Oct 1, 2002

US-PAT-NO: 6460127

DOCUMENT-IDENTIFIER: US 6460127 B1

**\*\* See image for [Certificate of Correction](#) \*\***

TITLE: Apparatus and method for signal processing

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Abstract</a>	<a href="#">Claims</a>	<a href="#">KIMC</a>	<a href="#">Draw De</a>
----------------------	-----------------------	--------------------------	-----------------------	------------------------	--------------------------------	----------------------	---------------------------	--------------------------	------------------------	----------------------	-------------------------

☐ 3. Document ID: US 6424430 B1

L5: Entry 3 of 8

File: USPT

Jul 23, 2002

US-PAT-NO: 6424430

DOCUMENT-IDENTIFIER: US 6424430 B1

**\*\* See image for [Certificate of Correction](#) \*\***

TITLE: Rendering of objects on graphical rendering devices as clipped images

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Figures	Claims	KWIC	Draw De
------	-------	----------	-------	--------	----------------	------	-----------	----------	---------	--------	------	---------

☐ 4. Document ID: US 6313840 B1

L5: Entry 4 of 8

File: USPT

Nov 6, 2001

US-PAT-NO: 6313840

DOCUMENT-IDENTIFIER: US 6313840 B1

TITLE: Smooth shading of objects on display devices

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Figures	Claims	KWIC	Draw De
------	-------	----------	-------	--------	----------------	------	-----------	----------	---------	--------	------	---------

☐ 5. Document ID: US 6128046 A

L5: Entry 5 of 8

File: USPT

Oct 3, 2000

US-PAT-NO: 6128046

DOCUMENT-IDENTIFIER: US 6128046 A

TITLE: Key signal generating apparatus and picture synthesis apparatus, and key signal generating method and picture synthesis method

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Figures	Claims	KWIC	Draw De
------	-------	----------	-------	--------	----------------	------	-----------	----------	---------	--------	------	---------

☐ 6. Document ID: US 6097839 A

L5: Entry 6 of 8

File: USPT

Aug 1, 2000

US-PAT-NO: 6097839

DOCUMENT-IDENTIFIER: US 6097839 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Method and apparatus for automatic discriminating and locating patterns such as finder patterns, or portions thereof, in machine-readable symbols

Full	Title	Citation	Front	Review	Classification	Date	Reference	Abstract	Figures	Claims	KWIC	Draw De
------	-------	----------	-------	--------	----------------	------	-----------	----------	---------	--------	------	---------

☐ 7. Document ID: US 5717781 A

L5: Entry 7 of 8

File: USPT

Feb 10, 1998

US-PAT-NO: 5717781

DOCUMENT-IDENTIFIER: US 5717781 A

TITLE: Ophthalmic lens inspection method and apparatus



Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw De
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	--------	------	---------

☐ 8. Document ID: US 4910786 A

L5: Entry 8 of 8

File: USPT

Mar 20, 1990

US-PAT-NO: 4910786

DOCUMENT-IDENTIFIER: US 4910786 A

TITLE: Method of detecting intensity edge paths

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KIMC	Draw De
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	--------	------	---------

Clear

Generate Collection

Print

Fwd Refs

Bkwd Refs

Generate OACS

Terms

Documents

L3 or L4

8

Display Format: -

Change Format

[Previous Page](#)

[Next Page](#)

[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L5: Entry 3 of 8

File: USPT

Jul 23, 2002

US-PAT-NO: 6424430

DOCUMENT-IDENTIFIER: US 6424430 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Rendering of objects on graphical rendering devices as clipped images

DATE-ISSUED: July 23, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bilodeau; William D.	Boulder Creek	CA		
George; Paul	Los Altos	CA		
Lazarony, Jr.; David R.	San Jose	CA		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Adobe Systems Incorporated	San Jose	CA			02

APPL-NO: 09/072503 [PALM]

DATE FILED: May 4, 1998

## PARENT-CASE:

The application is a continuation in part of U.S. Application Ser. No. 09/056,894, entitled "RENDERING OF OBJECTS ON GRAPHICAL RENDERING DEVICES AS CLIPPED IMAGES," filed by William D. Bilodeau, Paul George and David R. Lazarony on Apr. 6, 1998.

INT-CL-ISSUED: [07] G06 F 15/00, G06 K 1/00

US-CL-ISSUED: 358/1.2; 358/1.18, 382/260

US-CL-CURRENT: 358/1.2; 358/1.18, 382/260

FIELD-OF-CLASSIFICATION-SEARCH: 382/181, 382/196, 382/242, 382/243, 382/266, 382/199, 358/1.18, 358/1.17, 358/1.2, 364/516, 364/559, 345/425, 345/427  
See application file for complete search history.

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

Search Selected

Search ALL

Clear

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> <u>5544291</u>	August 1996	Gilley et al.	345/423
<input type="checkbox"/> <u>6124858</u>	September 2000	Ge et al.	345/425

ART-UNIT: 2622

PRIMARY-EXAMINER: Coles; Edward

ASSISTANT-EXAMINER: Lamb; Twyler

ATTY-AGENT-FIRM: Fish & Richardson P.C.

ABSTRACT:

The invention renders a resolution independent object having a silhouette by rendering the object to a buffer, determining the silhouette of the object from the buffer, generating a clipped image of the silhouette, and rendering the clipped image on the graphical rendering system.

35 Claims, 9 Drawing figures

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L5: Entry 6 of 8

File: USPT

Aug 1, 2000

US-PAT-NO: 6097839

DOCUMENT-IDENTIFIER: US 6097839 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Method and apparatus for automatic discriminating and locating patterns such as finder patterns, or portions thereof, in machine-readable symbols

DATE-ISSUED: August 1, 2000

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Liu; Lingnan	Mill Creek	WA		

## ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Intermec IP Corporation	Beverly Hills	CA			02

APPL-NO: 08/814001 [\[PALM\]](#)

DATE FILED: March 10, 1997

INT-CL-ISSUED: [07] [G06 K 7/10](#), [G06 K 9/00](#)

US-CL-ISSUED: 382/181; 235/462

US-CL-CURRENT: [382/181](#); [235/462.01](#)

FIELD-OF-CLASSIFICATION-SEARCH: 235/462-464, 382/181-3, 382/197, 382/198, 382/267, 382/269

See application file for complete search history.

PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

Search Selected

Search ALL

Clear

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> <a href="#">4874936</a>	October 1989	Chandler et al.	235/494
<input type="checkbox"/> <a href="#">4916298</a>	April 1990	Raphael	235/463
<input type="checkbox"/> <a href="#">4998010</a>	March 1991	Chandler et al.	235/494
<input type="checkbox"/> <a href="#">5031227</a>	July 1991	Raasch et al.	382/22
<input type="checkbox"/> <a href="#">5052044</a>	September 1991	Gaborski	382/32
<input type="checkbox"/> <a href="#">5073955</a>	December 1991	Evers	382/21

<input type="checkbox"/>	<u>5124537</u>	June 1992	Chandler et al.	235/462
<input type="checkbox"/>	<u>5155343</u>	October 1992	Chandler et al.	235/462
<input type="checkbox"/>	<u>5189292</u>	February 1993	Batterman et al.	235/494
<input type="checkbox"/>	<u>5233670</u>	August 1993	Dufour et al.	382/22
<input type="checkbox"/>	<u>5241166</u>	August 1993	Chandler	235/494
<input type="checkbox"/>	<u>5243655</u>	September 1993	Wang	380/51
<input type="checkbox"/>	<u>5276315</u>	January 1994	Surka	235/462
<input type="checkbox"/>	<u>5319181</u>	June 1994	Shellhammer et al.	235/462
<input type="checkbox"/>	<u>5324923</u>	June 1994	Cymbalski et al.	235/454
<input type="checkbox"/>	<u>5373147</u>	December 1994	Noda	235/462
<input type="checkbox"/>	<u>5376780</u>	December 1994	Klueter	235/462
<input type="checkbox"/>	<u>5668893</u>	September 1997	Kanda et al.	382/197
<input type="checkbox"/>	<u>5719967</u>	February 1998	Sekine	382/266
<input type="checkbox"/>	<u>5739518</u>	April 1998	Wang	235/462
<input type="checkbox"/>	<u>5777309</u>	July 1998	Maltsev et al.	235/462
<input type="checkbox"/>	<u>5781667</u>	July 1998	Schmidt et al.	382/308
<input type="checkbox"/>	<u>5790701</u>	August 1998	Shijo et al.	382/205
<input type="checkbox"/>	<u>5854478</u>	December 1998	Liu et al.	235/462
<input type="checkbox"/>	<u>5881171</u>	March 1999	Kinjo	382/199

## OTHER PUBLICATIONS

Gonzalez, Rafael C. and Paul Wintz, Digital Image Processing, Addison-Wesley Publishing Company, Reading, Massachusetts, 1977, pp. 39-47.

Davies, E.R., Machine Vision: Theory, Algorithms, Practicalities, Academic Press, London, 1989, pp. 207-215 and 265-271.

Pavlidis, Theo et al., "Information Encoding with Two-Dimensional Bar Codes," Computer, Jun., 1992, pp. 18-28.

Russ, John C., The Image Processing Handbook, CRC Press, Boca Raton, Florida, Nov., 1994, pp. 170-189.

ART-UNIT: 273

PRIMARY-EXAMINER: Au; Amelia

ASSISTANT-EXAMINER: Miller; Martin E

ATTY-AGENT-FIRM: Perkins Coie LLP

## ABSTRACT:

A method and apparatus for locating geometric shapes or edges thereof in data collection symbols initially samples and stores an image of light reflected from the symbol. Thereafter, two routines are performed. A first routine performs low level vision processing by identifying linked points along edges, lines, curves or within shapes. A rapid pixel linking subroutine identifies edge pixels in symbol images lacking distortion. If the edge or shape suffers from distortions, then one

or more distortion compensating subroutines locate sequential linked pixels despite such distortions. The resulting coordinates of linked points, which represent lines, curves and other geometric shapes, are then employed by a second routine which identifies patterns within the identified lines/curves. Based on these identified patterns, types of symbols from various symbologies can be identified and located within the stored image.

29 Claims, 17 Drawing figures

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L5: Entry 6 of 8

File: USPT

Aug 1, 2000

DOCUMENT-IDENTIFIER: US 6097839 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Method and apparatus for automatic discriminating and locating patterns such as finder patterns, or portions thereof, in machine-readable symbols

Application Filing Date (1):  
19970310Detailed Description Text (33):

The CPU 14 again performs steps 208, 210, 214, 216, 218, and 220 as the CPU incrementally examines pixels extending along a gradient direction through the current shape. If the image intensity value  $I_{sub.m}$  of a currently examined point is greater than the intensity threshold  $I_{sub.thresh}$  in step 210, or the counter value  $n$  is greater than the maximum X dimension  $M$  in step 216, then the CPU 14 outputs the current value of the counter  $n$ , the summation of the intensity values  $Sum$ , and the list of X and Y axes coordinates of the points examined along the gradient direction under step 212, and the subroutine 202 ends.

Detailed Description Text (36):

Referring to FIG. 10, the CPU 14 in step 222 must locate the centerpoint C of such bell-shaped curve. The bell-shaped curve cross-sectional profile extends from an initial point or location 0 (i.e., the starting point initially identified under step 202), and a final point  $n$ , which is the edge pixel opposite from the starting pixel in the gradient direction  $\theta$ . Under a simple, quick method, the CPU 14 determines the centerpoint C by simply dividing  $n$  by 2 to identify a median pixel  $n'$  (i.e.,  $n' = n/2$ ). Therefore, the centerpoint C is equal to the coordinates of the pixel at  $n'$  under the following equation:

## CLAIMS:

1. In a symbol reading apparatus capable of storing an image of a data collection symbol, the stored image being comprised of a plurality of pixels and the symbol having a predetermined pattern of geometric shapes, a method of locating portions of the shapes within the stored image, the method comprising:

locating a starting pixel of a shape of the symbol within the stored image;

sequentially identifying adjacent pixels along an edge of the shape within the stored image from the starting pixel;

performing at least one distortion compensating subroutine selected from a plurality of distortion compensating subroutines if an adjacent pixel cannot be located, wherein at least one of the plurality of distortion compensating subroutines does not fill in the adjacent pixel;

selecting at least one linked pixel in the stored image based on the performing;

repeating the sequentially identifying, performing and selecting;

producing a set of pixels that identify at least a portion of the shape based on

the repeating;

determining if the set of pixels contains representations of one of several selected patterns of geometric portions for corresponding data collection symbology types, a first selected pattern corresponding to the predetermined pattern of geometric shapes of the data collection symbol, wherein the selected patterns of geometric portions include lines and curves represented by a series of substantially adjacent pixels, and wherein the selected patterns do not represent widths of a plurality of shapes as measured along an intersecting sampling path; and

identifying the data collection symbol in the stored image if the detected geometric portions correspond to the first selected pattern.

2. The method of claim 1 wherein sequentially identifying includes:

determining a gradient direction from the starting pixel;

comparing the gradient direction to a predetermined value;

examining a plurality of pixels adjacent to the starting pixel, the adjacent pixels being in forward direction of the starting pixel based on the gradient direction;

selecting a forward pixel as a next edge starting pixel from the plurality of adjacent pixels; and

repeating the determining, comparing, examining and selecting a forward pixel until the starting pixel unfavorably compares to the predetermined value or a forward pixel cannot be selected.

9. A computer implemented method of locating an image of a data collection symbol in a two-dimensional stored image, the two-dimensional stored image being represented by a plurality of points and the data collection symbol having a predetermined pattern of geometric shapes, the method comprising:

detecting geometric portions of the data collection symbol in the two-dimensional stored image based on groups points in the plurality of points;

determining, if the detected geometric portions correspond to one of several selected patterns of geometric portions for corresponding data collection symbology types, a first selected pattern corresponding, to the predetermined pattern of geometric shapes of the data collection symbol wherein the selected patterns of geometric portions includes lines and curves represented by a series of substantially adjacent pixels, and wherein the selected patterns do not represent widths of a plurality of shapes as measured along an intersecting sampling path; and

identifying the data collection symbol in the two-dimensional stored image if the detected geometric portions correspond to the first selected pattern.

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)



[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L5: Entry 6 of 8

File: USPT

Aug 1, 2000

DOCUMENT-IDENTIFIER: US 6097839 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Method and apparatus for automatic discriminating and locating patterns such as finder patterns, or portions thereof, in machine-readable symbols

Application Filing Date (1):  
19970310Detailed Description Text (33):

The CPU 14 again performs steps 208, 210, 214, 216, 218, and 220 as the CPU incrementally examines pixels extending along a gradient direction through the current shape. If the image intensity value I.sub.m of a currently examined point is greater than the intensity threshold I.sub.thresh in step 210, or the counter value n is greater than the maximum X dimension M in step 216, then the CPU 14 outputs the current value of the counter n, the summation of the intensity values Sum, and the list of X and Y axes coordinates of the points examined along the gradient direction under step 212, and the subroutine 202 ends.

Detailed Description Text (36):

Referring to FIG. 10, the CPU 14 in step 222 must locate the centerpoint C of such bell-shaped curve. The bell-shaped curve cross-sectional profile extends from an initial point or location 0 (i.e., the starting point initially identified under step 202), and a final point n, which is the edge pixel opposite from the starting pixel in the gradient direction .theta.. Under a simple, quick method, the CPU 14 determines the centerpoint C by simply dividing n by 2 to identify a median pixel n' (i.e.,  $n' = n/2$ ). Therefore, the centerpoint C is equal to the coordinates of the pixel at n' under the following equation:

## CLAIMS:

1. In a symbol reading apparatus capable of storing an image of a data collection symbol, the stored image being comprised of a plurality of pixels and the symbol having a predetermined pattern of geometric shapes, a method of locating portions of the shapes within the stored image, the method comprising:

locating a stalking pixel of a shape of the symbol within the stored image;

sequentially identifying adjacent pixels along an edge of the shape within the stored image from the starting pixel;

performing at least one distortion compensating subroutine selected from a plurality of distortion compensating subroutines if an adjacent pixel cannot be located, wherein at least one of the plurality of distortion compensating subroutines does not fill in the adjacent pixel;

selecting at least one linked pixel in the stored image based on the performing;

repeating the sequentially identifying, performing and selecting;

producing a set of pixels that identify at least a portion of the shape based on

the repeating;

determining if the set of pixels contains representations of one of several selected patterns of geometric portions for corresponding data collection symbology types, a first selected pattern corresponding to the predetermined pattern of geometric shapes of the data collection symbol, wherein the selected patterns of geometric portions include lines and curves represented by a series of substantially adjacent pixels, and wherein the selected patterns do not represent widths of a plurality of shapes as measured along an intersecting sampling path; and

identifying the data collection symbol in the stored image if the detected geometric portions correspond to the first selected pattern.

2. The method of claim 1 wherein sequentially identifying includes:

determining a gradient direction from the starting pixel;

comparing the gradient direction to a predetermined value;

examining a plurality of pixels adjacent to the starting pixel, the adjacent pixels being in forward direction of the starting pixel based on the gradient direction;

selecting a forward pixel as a next edge starting pixel from the plurality of adjacent pixels; and

repeating the determining, comparing, examining and selecting a forward pixel until the starting pixel unfavorably compares to the predetermined value or a forward pixel cannot be selected.

9. A computer implemented method of locating an image of a data collection symbol in a two-dimensional stored image, the two-dimensional stored image being represented by a plurality of points and the data collection symbol having a predetermined pattern of geometric shapes, the method comprising:

detecting geometric portions of the data collection symbol in the two-dimensional stored image based on groups points in the plurality of points;

determining, if the detected geometric portions correspond to one of several selected patterns of geometric portions for corresponding data collection symbology types, a first selected pattern corresponding, to the predetermined pattern of geometric shapes of the data collection symbol wherein the selected patterns of geometric portions includes lines and curves represented by a series of substantially adjacent pixels, and wherein the selected patterns do not represent widths of a plurality of shapes as measured along an intersecting sampling path; and

identifying the data collection symbol in the two-dimensional stored image if the detected geometric portions correspond to the first selected pattern.

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)**End of Result Set**

Generate Collection

Print

L5: Entry 8 of 8

File: USPT

Mar 20, 1990

DOCUMENT-IDENTIFIER: US 4910786 A

TITLE: Method of detecting intensity edge paths

Application Filing Date (1):19850930DATE ISSUED (1):19900320Brief Summary Text (34):

The pixel values may be gradient magnitudes and directions determined by using a Gaussian weighted gradient operator.

Brief Summary Text (36):

Accordingly, it is an object of the present invention to provide a method of detecting intensity edge paths in an image, such image being produced by techniques such as X-ray, CAT scan, nuclear magnetic resonance, photographic, video recording, and photodetection techniques, in which a root node having high probability of lying on an edge path is initially selected and various adjacent nodes are assessed sequentially to determine the most likely edge path; to provide such a method in which a metric is calculated for each node based upon the pixel value of the node and the topology of the path by which the node was reached, such metric being an indication of the likelihood that the node lies on the edge path; and to provide a method in which the pixel values are representative of the gradient magnitude and direction of the image.

Detailed Description Text (15):

One final note. By virtue of its path metric, SEL can provide subsequent processing tasks with quantitative information concerning the confidence in segments or whole edges. Other attributes such as length, curvature, direction, and an ordering of the constituent pixels are explicitly determined and immediately available to higher level tasks.

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

## Refine Search

### Search Results -

Terms	Documents
L3 or L4	8

Database:

US Pre-Grant Publication Full-Text Database  
 US Patents Full-Text Database  
 US OCR Full-Text Database  
 EPO Abstracts Database  
 JPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

Search:

L5  

Refine Search

Recall Text 

Clear

Interrupt

### Search History

DATE: Wednesday, February 22, 2006 [Printable Copy](#) [Create Case](#)

<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>	<u>Set</u> <u>Name</u> result set
side by side			
DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES;			
OP=OR			
<u>L5</u>	L3 or L4	8	<u>L5</u>
<u>L4</u>	L1 and @pd<=20000414	2	<u>L4</u>
<u>L3</u>	L1 and @ad<=20000414	8	<u>L3</u>
<u>L2</u>	L1 and @ad<=000414	0	<u>L2</u>
<u>L1</u>	(curv\$ same (road\$ or street\$ or path\$) same (determin\$ or estimat\$)) and (gradient\$ near3 pixel\$)	43	<u>L1</u>

END OF SEARCH HISTORY